CHEMICAL REACTION AND EQUATION

(FOR CLASS PRACTICE)

CASE BASE STUDY QUESTION

Q.1. **Read the given passage carefully and answer the following question.**
A student entered into the chemistry lab and he was offered to perform an experiment on a green coloured crystal. When he took the green coloured crystal near to the burner and started heating, he observed that after sometime the green colour of crystal fade away and a reddish brownish colour substance formed. In the same experiment he also observed a pungent smell of a gas evolved which turns a blue litmus paper into blue.

1. In the given experiment the green colour crystal is
(A) Fe_2O_3 (B) $CuSO_4.5H_2O$ (C) $FeSO_4.7H_2O$ (D) $ZnSO_4.7H_2O$

2. The gas evolved in the given experiment is
(A) SO_3 (B) SO_2 (C) CO_2 (D) Both A and B

3. The reddish brown colour substance formed in the given experiment is
(A) SO_3 (B) FeO (C) Fe_3O_4 (D) Fe_2O_3

4. Identity the type of reaction occurred in the given experiment
(A) Combination reaction (B) Oxidation reaction
(C) Decomposition reaction (D) Reduction reaction

Q.2. **Figure -1**

Figure - 2

In the following given figures, figure 1 is the condition of samosa in initial stage and figure 2 is the condition of samosa after 2 hours when exposed to air.

On the basis of above figure give the answer of following questions.

5. The taste of samosa gets change in figure 2 because of
(A) Samosa gets reduced in presence of air
(B) Samosa gets oxidize in presence of air
(C) There is physical change takes place in figure 2
(D) Both b and c

6. The main reason for changing of state of samosa from figure 1 to figure 2 is
(A) Rancidity (B) Oxidation (C) Corrosion (D) Both a and b

7. Due to which of the following substance present in samosa the taste of samosa changes
(A) Oil/Fats (B) Flour (C) Potato (D) Onion

Q.3. While performing an electrolysis of water it decomposes into hydrogen and oxygen. In this process the gas A obtained at anode and gas B obtained at cathode.

On the above passage give the answer of the following.

8. Identify the gas A obtained at anode
(A) Hydrogen (B) Oxygen (C) Ozone (D) None

9. Identify the gas B obtained at cathode
(A) Ozone (B) Hydrogen (C) Oxygen (D) None

10. The correct equation of reaction taken place at cathode
(A) $H_2 \rightarrow 2H^+ + 2e^-$ (B) $4OH^- \rightarrow 2H_2O + O_2 + 4e^-$
(C) $2H^+ + 2e^- \rightarrow H_2$ (D) $2H_2O + O_2 + 4e^- \rightarrow 4OH^-$

ASSERTION AND REASON TYPE QUESTION

DIRECTION: In the following questions assertion and reason has been put forward. Read the given statement carefully and choose the correct option.

(A) Both A and R are true and R is the correct explanation of A.
(B) Both A and R are true but R is the not correct explanation of A.
(C) A is true and R is false.
(D) A is false and R is true.

1. **Assertion (A) :** Crushing and grinding of an ore is a physical change
Reason (R) : When the ore gets crushed and grind , their pieces can be joined to get back the original form of ore

2. **Assertion (A) :** Rancidity can be prevented by adding anti-oxidant to foods containing fats and Oil
Reason (R) : Anti-oxidant is a substance which prevents oxidation in foods containing fats and oil

3. **Assertion (A) :** Tin on reaction with dil. HCl produces hydrogen gas
Reason (R) : A more reactive element displaces less reactive element in a displacement reaction

4. **Assertion (A) :** When sugar crystal are heated it produces steamy vapour, and leaves behind brownish black substance
Reason (R) : A change in which colour changes observed is called physical change.

5. **Assertion (A) :** $Mg + O_2 \rightarrow 2MgO$
Reason (R) : A balance chemical equation follows law of conservation of mass

6. **Assertion (A) :** Solid precipitate of PbI_2 forms on reaction of lead nitrate and potassium iodide.
Reason (R) : In a chemical change formation of precipitate take place.

7. **Assertion (A) :** All chemical equation are written under NTP condition if conditions are not otherwise mentioned
Reason (R) : In a given chemical equation no information about the speed of reaction and sense of timing can be obtained

8. **Assertion (A) :** In a balanced chemical equation the amount of electrical charges are conserved
Reason (R) : Silver chloride in presence of sunlight breaks down into grey silver and chlorine

9. **Assertion (A) :** The following chemical equation FeS (s) + dil. H_2SO_4 (aq) → $FeSO_4$ (aq) + H_2S (g) is a double displacement equation
Reason (R) : When dilute sulphuric acid is added to pieces of iron sulphide they both exchange their ions

10. **Assertion (A) :** In reaction of $MnO_2 + 4HCl \rightarrow MnCl_2 + Cl_2 + 2H_2O$, MnO_2 act as oxidizing agent and HCl act as reducing agent
Reason (R) : In a redox reaction the substance which gets oxidized act as reducing agent and the substance which gets reduced act as oxidizing agent